

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A method for treating ~~[[an]]~~ a metallic implant surface intended for implantation into bone tissue, said method comprising:

providing a microroughness onto said implant surface by treating the metallic implant surface with an aqueous solution of hydrofluoric acid, wherein the concentration of the hydrofluoric acid is less than 0.5 M, resulting in etching, for an etching period of up to 180 seconds at room temperature;

wherein said microroughness comprises pores and peaks having a pore diameter of ≤ 1 μm , a pore depth of ≤ 500 nm, and a peak width, at half the pore depth, of from 15 to 150% of the pore diameter,~~and~~

~~the implant surface is a metallic implant surface.~~

2. **(Previously Presented)** The method according to claim 1, wherein the pore diameter is within the range of 50 nm to 1 μm and the pore depth is within the range of 50 to 500 nm.

3. **(Previously Presented)** The method according to claim 1 or 2, wherein a root-mean-square roughness (R_q and/or S_q) of ≤ 250 nm is provided.

4-7. **(Cancelled)**

8. **(Currently Amended)** The method according to claim 1, wherein the concentration of the hydrofluoric acid is 0.1 M and the etching period is up to 60 sec at room temperature.

9. **(Previously Presented)** The method according to claim 1 or 2, further comprising providing a macroroughness on the implant surface prior to providing the microroughness.

10. **(Previously Presented)** The method according to claim 9, wherein the macroroughness is provided by blasting the implant surface.

11. **(Previously Presented)** The method according to claim 1 or 2, wherein said metallic implant surface is made of commercially pure titanium or an alloy of titanium.

12. **(Cancelled)**

13. **(Previously Presented)** An implant for implantation into bone tissue having an implant surface characterized in that at least a part of the implant surface comprises a microroughness which comprise pores and peaks having a pore diameter of $\leq 1 \mu\text{m}$, a pore depth of $\leq 500 \text{ nm}$, and a peak width, at half the pore depth, of from 15 to 150% of the pore diameter, wherein the microroughness has a root-mean-square roughness (R_q and/or S_q) of $\leq 250 \text{ nm}$.

14. **(Previously Presented)** The implant according to claim 13, wherein the pore diameter is within the range of 50 nm to 1 μ m and the pore depth is within the range of 50 to 500 nm.

15. **(Cancelled)**

16. **(Previously Presented)** The implant according to claim 13 or 14, wherein the implant surface further comprises a macro-roughness.

17. **(Previously Presented)** The implant according to claim 13 or 14, wherein said implant is a metallic implant.

18. **(Previously Presented)** The implant according to claim 17, wherein said metallic implant is made of commercially pure titanium or an alloy of titanium.

19. **(Previously Presented)** The implant according to claim 13 or 14, wherein the implant is a dental implant.

20. **(Previously Presented)** The implant according to claim 13 or 14, wherein the implant is an orthopaedic implant.

21. **(Previously Presented)** The method according to claim 1, wherein the peak width, at half the pore depth, is from 30 to 150% of the pore diameter.

22. **(Previously Presented)** The method according to claim 1, wherein the peak width, at half the pore depth, is from 60 to 150% of the pore diameter.

23. **(Previously Presented)** The implant according to claim 13, wherein the peak width, at half the pore depth, is from 30 to 150% of the pore diameter.

24. **(Previously Presented)** The implant according to claim 13, wherein the peak width, at half the pore depth, is from 60 to 150% of the pore diameter.